Graph Neural Networks vs Convolutional Neural Networks for Image Classification

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Introduction

- Image classification is used in many applications and industries.
- Neural networks are a subset of machine learning which seek to emulate how the human brain predicts things.
- Typically Convolutional Neural Networks (CNNS) are trained for image predictions due to their ability to deal with large input data.
- By converting input image data into graphs, Graph Neural Networks can be used for normal image data.

Neural Network Theory

- Neurons in a Neural Network are connected in layers with a threshold.
- Each neurons value is known as its activation which is determined by all previous layer neurons using a weighted sum.

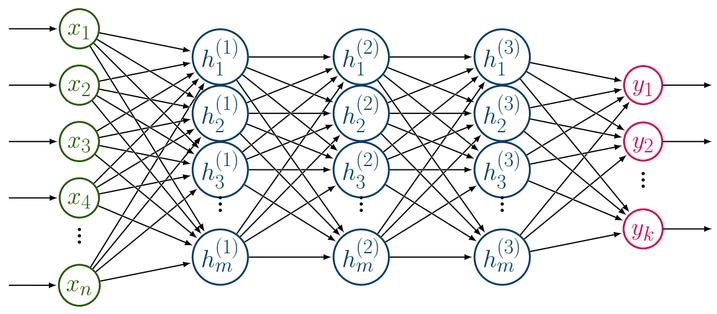

Figure 1: General neural network layer structure.

- The neurons are tweaked during training to reduce overfitting.

Pre-Processing the Data

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GNN ARCHITECTURE

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EVALUATION OF MODEL

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CONCLUSION & DISCUSSION

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REFERENCES